Central Alaska Network Jumping with New Critters

Small mammal inventory efforts provide the first documentation of the water shrew and tundra shrew in WRST, and the meadow jumping mouse in DENA. The inventory also provides new information on several other species, including meadow vole , long-tailed vole, taiga vole, singing vole, brown lemming, northern bog lemming, and pygmy shrew.

The tiny shrew (Sorex yukonicus; previously known in North America from only 6 locations (12 specimens) in Alaska) was captured in all three parks during the 2001/2002 Small Mammal Inventory efforts. This species was not expected to occur in the network and the records represent significant eastward range extensions for this extremely rare and poorly known species.

Over 190 plant species that had not been known to the preserve were verified during the 2002 Plant inventory effort in YUCH. The most exciting discovery was Tricophorum pumilum, which is known from only one other location in Alaska. Other significant collections included *Claytonia bostockii*, *Montia fontana*, *Ranunculus glacialis*, and *Arenaria longipedunculata*. Twenty-two plant species that are currently ranked by the Alaska Natural Heritage program as rare were documented. These preliminary numbers will very likely rise as final determinations of collections are made through fall 2002.

Dolly varden were found at 3 sites sampled this summer in WRST in highly turbid glacial streams. These findings were unexpected since fish don't normally occupy these habitats. These findings will likely lead to additional work looking at habitat use in turbid glacial streams. *CAKN AARWP FY02-03*

The Alaska Region I&M Program has a webpage!
You can find us online at: ***http://www.nature.nps.gov/im/units/AKRO/***

Ecological Subsections Completed for Alaska's Parks

A team of experienced ecologists and ecosystem mappers was assembled to generate ecological subsection maps of the parks. Led by Page Spencer (NPS), team members were chosen for their extensive experience in Alaskan ecosystems and mapping. Two workshops and several conference calls were held to standardize mapping procedures and criteria for delineation of features.

This helped to ensure consistent mapping across the state through ecosystems ranging from polar arctic to rugged montane, boreal valleys and coastal rainforests. Additional discussions were held between mappers with adjacent units to match lines and unit names across common park boundaries, or with previously mapped areas of the Chugach and Tongass National Forests.


Photo Credit:
Blain Anderson, AKSO

Every park now has a GIS shapefile of geographic units and the associated attribute files. Attribute files are standardized so that parks can be merged into multi-park or statewide datasets, or generalized into higher levels in the hierarchical ecological mapping scheme.

A detailed report was prepared for each park, outlining individual baseline data and resources, mapping procedures and a written description of every ecological unit in the park. Representative photos accompany most of the subsection descriptions. These reports are available as Word documents, and PDFs for printing or as html documents for digital browsing.

Taken en masse, these reports, descriptions and maps form the first comprehensive ecological look at the park units to date. *From the Ecological Subsections Overview. The reports, in their entirety, can be downloaded at: http://www.nature.nps.gov/im/units/AKRO/products/Products.htm*

Katmai Plants Work a Success

Field crews in Katmai National Park and Preserve have discovered new populations of rare species, and unexpected ones in some unusual habitats.

A number of discoveries represent significant range expansions. A population of the wetland tundra grass was found at Swikshak Lagoon over 200 miles east of its previously known range in northwestern Alaska and northern Siberia. Small disjunct populations also occur at Hazen Bay and Cold Bay. Additionally, it is the first time it has been discovered growing in a woodland marsh in Alaska.

The thread-leaved sedge, a cool-season grasslike plant typically found on dry soils of open prairies and rolling hills, was found on a mountainous ridge above Swikshak Lagoon, approximately 450 miles to the southwest of its known range.

The few-flowered spikerush, was found in a number of locations well to the southwest of its known Alaskan distribution. Two rare plant species, an arctic grassland primrose *Primula tschuktschorum* and Aleutian cress were also found.

Field sites were selected to best fill in the gaps left by earlier floristic surveys and to maximize the probability of reaching our goal of documenting at least 90% of all vascular plants occurring within Katmai NP and Preserve(KATM) and Alagnak Wild River. Five general areas were selected within KATM.

A large area near Swikshak Lagoon was selected for its diversity of biophysical features. The Mirror Lake area was chosen to maximize the collection of alpine species in a zone where the biogeographic regions of the Peninsula and the Interior apparently converge.

Contact Creek was chosen as a site due to the presence of a calcareous outcrop (a determinant of a large group of vascular plants associated with basic soils) and its southwesterly location. Opportunistic collections were also made at Brooks Camp and Dakavac Lake. This Inventory was lead by Rob Lipkin and Matt Carlson (AKNHP) and their assistants. *From the SWAN AARWP FY02-03*

National Park Service
Alaska Region
Inventory & Monitoring Program

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The I&M Outlook

November 2002

...a newsletter of the Alaska Region Inventory and Monitoring Program

In this edition:

Happenings

Feb 25-27
I&M Workshop
(Location TBA)

The Alaska Region is divided into four I&M Networks based on ecology, location, and shared resources. These are:

The **Arctic Network** (*ARCN*) includes:
Cape Krusenstern NM, Bering Land Bridge NPres., Noatak NPres, Kobuk Valley NP, and Gates of the Arctic NP & Pres.

Central Alaska(*CAKN*): Wrangell-St Elias NP & Pres., Yukon-Charley Rivers NPres, and Denali NP & Pres.

Southeast Alaska(*SEAN*): Sitka NHP, Klondike Goldrush NHP, and Glacier Bay NP & Pres.

Southwest Alaska(*SWAN*): Alagnak WR, Kenai Fjords NP, Katmai NP & Pres., Lake Clark NP & Pres., and Aniakchak NM & Pres.

Alagnak Wild River Gets Attention - Plants and Fish Fill in Blanks

The Alagnak Wild River was host to two significant field inventories this summer looking to increase the number of known plant and fish species in and along the river.

Plant collections were made along its length from its headwaters at the Nonvianuk Branch to the end of the designated wild river segment. A total of 523 vascular plant specimens were collected, recorded, and pressed for Katmai National Park and Preserve and Alagnak Wild River(ALAG). Approximately 130 species are new records and previously undocumented species. This Inventory was lead by Rob Lipkin and Matt Carlson (AKNHP) and their assistants

Also this year, Joe Miller, Fisheries Biologist at Katmai, and his assistants successfully completed a field inventory of freshwater fish in ALAG. Fourteen species not previously documented for the Park were considered to be possible residents and were targeted in the inventory. Of these fourteen species, nine were found to occur: Aleutian sculpin, slimy sculpin, Alaska blackfish, northern pike, three spine stickleback, Japanese lamprey, burbot, round whitefish, and nine spine stickleback.

Five species considered possible, yet unlikely, to occur in the ALAG were not found: longnose sucker, pygmy whitefish, whitefish sp., smelt sp., and lake whitefish. The high elevations and steep gradients of the waterways are suspected of excluding these species from the river. Contacts and planning for fish curation were initiated with Dr. Gordon Haas at UAM. *From the SWAN AARWP FY02-03*

Little Amphibian Project Thinks Big

The NPS amphibian inventory has grown to encompass all four I&M networks in Alaska (SEAN, SWAN, CAKN, ARCN). The weatherproof "flashcards" (identification field guides for expected amphibians) were revised, printed, and widely distributed (150 sets) to park staffs and principal investigators in all four Alaska networks.

An additional 100 sets were distributed to park interpreters, local groups, volunteers, and other interested individuals. Amphibian distributions were entered into GIS, and a tracking database was further refined and populated.


Photo Credit:
Dan Young, LACL

Under the continuing oversight of Blain Anderson, I&M Technician, this opportunistic survey has has been responsible for upgrading amphibians in many parks from the expected category, to confirmed in NPSpecies, the master species database developed by the I&M Program. This summer, the study found wood frogs along the Katmai Coast, in Lake Clark, and the Kobuk Valley. More populations of boreal, or western, toads have been found this summer in Glacier Bay NP & Preserve, and include groups of tadpoles.

Communication links have also been formed with amphibian experts in cooperating agencies (e.g., USFWS, USFS, AKNHP), and Alaska I&M amphibian information is now on a shared online listserve at: *akherps@stikine.org*.

In addition, a webpage of The Amphibians of Alaska's National Parks has been created at:
http://www.nature.nps.gov/im/units/akro/Amphibians/ak_amphibians.htm.

Sara's Corner
(Notes from the Alaska Region)

I'd like to invite you to the I&M and Resource Management Workshop in Anchorage, February 25-27, 2003.

Our goal with this workshop is to share what we're learning about our parks as a result of the various activities under the Inventory and Monitoring Program and the Natural Resource Challenge.

On the first two days, we'll showcase the latest findings of the Biological Inventories (vascular plants, freshwater, marine and estuarine fish, small mammals, montane nesting shorebirds, and amphibians).

Recent products from the Landcover Mapping Program will be shown, as well as the news from water, fire, air, exotics, ecoregional mapping, YUCH bird inventory, soils, and the LTEM Program.

Vital Signs Monitoring is gearing up and we will have presentations on recent developments from the Central and Southwest Alaska Networks.

These are just a few of the studies that will be presented, so if you are hoping to see a particular project that is not listed or have any suggestions, please contact me.

Following the presentations on Thursday, February 27, we will host a technical questions day.

Experts on GIS, GPS, Landcover, Databases, and other disciplines will be available to work with you and solve your hi-tech problems.

Bring a problem dataset or other technical troubles, and we'll set you up with somebody to help.

See you there! ***RSVP by Feb 14 to me or Blain Anderson.***

Sara Wesser is the Regional Coordinator of the Inventory & Monitoring Program in Alaska.

Gates of the Arctic Inventory Finds Tiny Shrew, New to Park

The discovery of the tiny shrew (*Sorex yukonicus*) at Fortress Mountain, north of the crest of the Brooks Range, generated some excitement and constitutes a new species for Gates of the Arctic National Park and Preserve. It is a major range extension of this poorly documented species.

In July and August of 2002, two field crews from Idaho State University sampled small mammals at eight locations (see map below) in the Gates of the Arctic National Park and Preserve (GAAR). These localities were scattered throughout the Park in a variety of elevations and habitats.

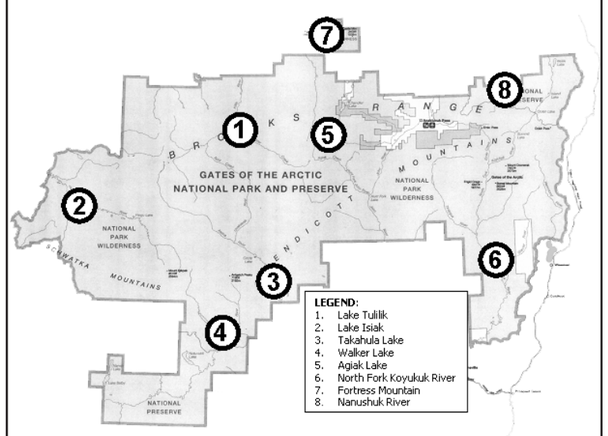
This inventory extended the known range of the meadow vole (*Microtus pennsylvanicus*) northward into the Park and upper Kobuk River drainage, and the known distribution of the pygmy shrew (*S. hoyi*), montane shrew (*S. monticolus*), and cinereus shrew (*S. cinereus*). The occurrence in GAAR of collared lemming (*Dicrostonyx groenlandicus*), tundra shrew (*S. tundrensis*) and barren ground shrew (*S. ugyunak*) is now substantiated with specimens. Specimens of the Alaska marmot (*Marmota broweri*) from Fortress Mountain and Nunushuk River provided new locality records for this poorly-known and under-represented species.

Three murid rodents (tundra vole, singing vole, and northern red-backed vole) and a shrew (montane shrew) were the most frequently sampled species (516, 466, 400, and 111 specimens, respectively), comprising over 80% of all specimens collected.

The findings from this study, when combined with specimen information gathered from a preliminary review of holdings in other major collections, bring the total number of documented small mammal species in GAAR to 20 of 22 potential species, or 91% coverage.

Other participating institutions included the University of Alaska Museum (UAM), USDA National Parasite Lab, University of New Mexico, and The Finnish Forest Research Institute (Vantaa Research Centre). Personnel involved in this field effort included Amy Runck, Heikki Hentonnen, Jukka Niemimaa, Juha Laakkonen, John Bender, Robert Allen, Brandy Jacobsen, and Kyndall Hilderbrandt.

Also participating were John Burch, Melanie Cook, and Teri Ball from the National Park Service. Elena Potikha participated as visiting scientist from Sikhote-Alin Zapovednik (GAAR sister-park). Logistical support was provided by the National Park Service and all voucher specimens of mammals were deposited in the University of Alaska Museum (UAM). *Taken from the Preliminary Summary, J. A. Cook, S. O. MacDonald, and A. M. Runck*



General localities in the *Gates of the Arctic National Park and Preserve*, Alaska, sampled for small mammals in July and August 2002.

Montane-nesting Bird Survey Cleans up in the Arctic Network

Bird Biologists at the Alaska Biological Science Center (ABSC) continued to document new bird species in the hilly terrain of the Arctic Network. In Kobuk Valley National Park (KOVA), crew members recorded five species on the NPS list of Expected Species that had not been documented to occur in the park: Common Merganser, Parasitic Jaeger, Horned Lark, Bluethroat, and Gray-crowned Rosy Finch.

In eastern Noatak National Preserve (NOAT), they recorded 3 species on the NPS list of Expected Species that had not been documented in the park: Common Merganser, Red-tailed Hawk, and Surfbird. However, two of these species (Common Merganser and Surfbird) had already been recorded by the group last year in western NOAT.

The two crews detected a total of 79 species of birds on the surveyed plots, including 54 in KOVA and 66 in eastern NOAT. Overall there were 13 species of shorebirds; eleven species of potential predators of shorebird adults, eggs, or young, including Seven raptors, two jaegers, and two corvids; 32 species of passerines; 17 species of waterfowl and/or loons; two species of gulls, two species of ptarmigan, one species of tern, and a single species of crane.

Lee Tibbetts at ABSC is making use of the Ecological Subsections of the northwestern parks that were developed by the I&M Program. These ecological units were recently mapped and entered into GIS to aid in statistical stratification andinterpretation of results.

Surveys began on 30 May and were completed by 9 June. Included in the group were eight ornithologists (Bob Gill, Maks Dementyev, Tibbitts, Julie Morse, Dan Ruthrauff, Tom Van Pelt, David Ward, and Alan Brelsford). *Taken from the Project Summary 2002, Bob Gill, Lee Tibbetts, et al.*

Klondike, Sitka Search Out Plants

Through a Cooperative Agreement, the SEAN contracted the Alaska Natural Heritage Program to implement a vascular plants inventory.

At Klondike Goldrush NHP, the inventory targeted diverse habitat types and poorly-sampled areas during July. Roughly 100 separate taxa are represented, and 20-40 are new records for the park. Although final determinations are not complete, no new significant range extensions or collections of species of conservation concern are apparent at this time.

At Sitka NHP (SITK), five species were documented as new to the park. Noteworthy among those was *Poa laxiflora* Buckl., a bluegrass listed by the U.S. Forest Service as a Sensitive Species for the Tongass National Forest and known from fewer than 15 sites in Alaska.

In addition, notes were made on weedy and introduced plant species. Although it appears that most continue to be restricted to disturbed areas in SITK, several may be starting to spread into less disturbed forested habitats. These include *Polygonum convolvulus*, *Poa palustris*, *Ranunculus repens*, and *Taraxacum officinalis*. Non-native mountain-ash and Japanese knotweed are also established in the park. *From the SEAN AARWP FY02-03*

2001 Results in for Arctic Plant Inventory

Several groups of intrepid plant collectors visited Noatak National Preserve for the Vascular Plant Inventory in 2001, and came away with some major finds.

Three northwest Alaska parks, Bering Land Bridge National Park and Preserve (BELA), Cape Krusenstern National Monument (CAKR), and Noatak National Preserve (NOAT) were visited during the 2001 field season as part of the ARCN Vascular Plant Inventory.

In NOAT, a significant NW range extension was made for *Oxytropis tananensis* which is otherwise known only from east-central Alaska. Determination was confirmed by B.A. Yurtsev who first described the species.

The crew recollected a yet-unnamed *Claytonia* from Siniktanneyak Mountain, which was first collected by Steve Young in the early 1970's. Live plants are now being grown at UAF, and at the University of Washington, where Dr. Robin O'Quinn is reviewing the taxonomy of the section of *Claytonia* to which this plant appears to belong.

Also notable is the discovery of *Potentilla stipularis* . This collection represents a minor SW range extension within Alaska.

Carolyn Parker (UAF Museum Herbarium) and Randy Meyers (BLM-Kotzebue) visited the Preserve in July and targeted sites and/or habitats that have not been visited, or which were ecologically unique and likely to support

uncommon, rare, or previously undocumented species.

A total of 331 collections were collected representing 217 species, including 128 newly documented for the Preserve were collected. Of these, 28 species were not on the expected list.

At Bering Land Bridge National Preserve, a total of 239 collections, representing 173 plant species, were collected. Of these, 32 are new records for the Preserve.

Noteworthy collections include the coastal grass *X_Dupoa labradorica* which was collected near the Singeak shelter cabin, and along with collections made at CAKR earlier in the summer (see below), document this grass for the first time in northwestern North America.

The only other previously known locality is Hudson Bay in eastern Canada. This grass is described as a probably sterile, but stabilized hybrid between *Poa eminens* and *Dupontia fisheri*, also both documented at Singeak. This material has been reviewed by J. Cayouette and S. Darbyshire (DAO, Ottawa, Canada) who originally described the hybrid *X Dupoa labradorica* from Hudson Bay.

continued...

Curiously, the group collected 128 species which were not on the expected list, undoubtedly reflecting how poorly documented the entire adjacent areas are, from which the expected list was generated. In turn, they did not find 63 species which were on the expected list. Most of these uncollected, but predicted, species are characteristic of boreal and continental habitats which were not sampled during the 2001 season and are not extensive within the Monument.

The BELA crew included Parker (UAF Museum Herbarium), Reidar Elven and Heidi Solstad (U. Oslo Herbarium, Norway), and Alfred Weyioyanna of Shishmaref.

A noteworthy find at Sheshalik, in Cape Krusenstern NM, was *Potentilla fragiformis,* a showy cinquefoil of the coastal zone. This species had been previously thought to be known only from the coastal areas of Chukotka and Kamchatka, Russia, and not part of the Alaskan flora.

After confirming the identification of material from Sheshalik, a careful search through the UAF Herbarium specimens of *P. hyparctica* (a similar looking plant having a very different style shape, a significant taxonomic characteristic for this group) resulted in finding three more specimens of *P. fragiformis* which had been previously mis-identified!

These collections were from Kivalina (A. Bucknell, 1960), Sheshalik (S. Young, 1973), and Gambell, St. Lawrence Island (D. Mason, 1976). Further searching through the early North American flora literature found references to *Potentilla fragiformis* being in 'Alaska'. A loan to the UAF Museum Herbarium of very early Alaskan specimens now held at the Canadian Museum of Nature in Ottawa included additional specimens of *P. fragiformis* from St. Paul and St. Lawrence islands.

Parker will recommend that this handsome cinquefoil be added to the AKNHP list of rare plants for Alaska. It will be included in the upcoming Flora of North America volumes by Dr. Barbara Ertter who is writing the updated

treatment for *Potentilla*. Plants are now being grown at the UAF research greenhouse from seed that was removed from the Sheshalik collections.

Additionally, three collections of *X_Dupoa labradorica* were also made at Sheshalik Spit. This species, which is new to Alaska, is now documented from 2 parklands.

A total of 467 collections representing 296 species were collected at Cape Krusenstern NM. This collection, combined with those of Steve Young (1973), bring a total of 303 plant species currently documented for CAKR. Crewmembers included Parker, Al Batten, Amy Denton (UAF Museum Herbarium), our own Tom Heinlein (NPS), and Elven and Solstad of Norway.

All collections are now safely curated, databased, and held at the UAF Museum Herbarium in Fairbanks. *Taken from the 2001 Summary Report, Carolyn Parker.*

This is the newsletter of the National Park Service, Alaska Region, Inventory and Monitoring Program. Questions, comments or items for publication, may be sent to:

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